

Response

U.S. Application No. 10/642,430

Attorney Docket No. HUL-003

REMARKS

Claims 2 - 5, 7 - 10, 12 - 15, 17 - 20, 22 - 25, 27 - 30, 32 - 35, 37 - 40, 42 - 45, and 47 - 50 are original claims. Claims 1, 6, 11, 16, 21, 26, 31, 36, 41 and 46 are currently amended to change "first material" to "first polymerizable organic material" and to change "second material" to "second polymerizable organic material". Claims 51-70 are withdrawn. No new matter is added.

Rejection Under 35 USC 112, First Paragraph

Claims 1-3, 7-9, 11-13, 17-19, 21-23, 27-29, 31-33, 37-39 41-43, and 47-49 were rejected under 35 USC 112, first paragraph, because the specification, while being enabling for a mixture of polymerizable organic monomers able to be aligned, such as a mixture of reactive mesogens with liquid crystalline phases, does not reasonably provide enablement for mixing any known materials that form a polymer network when polymerized. Reconsideration and withdrawal of this rejection is respectfully requested for at least the following reasons.

The presently claimed invention includes "mixing at least a first polymerizable organic material and a second polymerizable organic material to form a mixture" and "polymerizing the mixture to form a polymer network, the polymer network being at least one of charge-transporting or luminescent". Applicant is not trying to claim any known materials that form a polymer network when polymerized but rather is claiming "polymerizable organic materials"

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that “form a mixture” which in turn polymerizes “to form a polymer network” that is “at least one of charge-transporting or luminescent”. It is respectfully submitted that this is enabled under 35 USC 112, first paragraph.

Additionally, with respect to the Examiner stated scope of enablement, Applicant respectfully submits that the presently claimed invention may be applied to materials other than monomers. For example, the first and/or second materials may be dimers or oligers. Furthermore, Applicant respectfully submits that the presently claimed invention may be applied to materials that are not able to be aligned. For example, the first and/or second materials may be materials that form non-liquid crystal organic charge-transporting or luminescent networks. Note, for example, that paragraph [0017] specifically states that the alignment layer may be omitted and independent claims 1, 11, 21, 31 and 41 do not include any reference to alignment.

Applicant respectfully submits that the claims as amended are enabled. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection of claims 1-3, 7-9, 11-13, 17-19, 21-23, 27-29, 31-33, 37-39 41-43, and 47-49 under 35 USC 112, first paragraph.

Rejection Under 35 USC 112, Second Paragraph

Claims 1-3, 7-9, 11-13, 17-19, 21-23, 27-29, 31-33, 37-39 41-43, and 47-49 were rejected under 35 USC 112, first paragraph, as being indefinite for failing to point out and distinctly claim the subject matter which Applicant regards as the invention. Specifically, the claims, as rewritten, fail to set forth what kind(s) of “first materials” and “second material” are required to

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provide a polymer network that is charge transporting or luminescent. Reconsideration and withdrawal of this rejection is respectfully requested for at least the following reasons.

Applicant has changed “first material” to “first polymerizable organic material” and changed “second material” to “second polymerizable organic material”. Applicant respectfully submits that these terms particularly point out and distinctly claim the subject matter claim. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection of claims 1-3, 7-9, 11-13, 17-19, 21-23, 27-29, 31-33, 37-39 41-43, and 47-49 under 35 USC 112, second paragraph.

Rejections Under 35 USC 102

Claims 1-9, 11-19, 21-29, 31-39, and 41-49 were rejected under 35 USC 102(b) over Ninomiya et al. (5654046 or 5691092). Reconsideration and withdrawal of these rejections are respectfully requested for at least the following reasons.

Claims 1, 11, 21, 31 and 41 include “mixing at least a first polymerizable organic material and a second polymerizable organic material to form a mixture” and “polymerizing the mixture to form a polymer network, the polymer network being at least one of charge-transporting or luminescent”. The polymer network is neither charge-transporting nor luminescent. Instead, these applications are directed to liquid crystal polymer layers that operate via light scattering.

Claims 1-9, 11-19, 21-29, 31-39, and 41-49 were rejected under 35 USC 102(b) over Iijima et al. (5,683,838). Reconsideration and withdrawal of this rejection is respectfully requested for at least the following reasons.

Claims 1, 11, 21, 31 and 41 include “mixing at least a first polymerizable organic material and a second polymerizable organic material to form a mixture” and “polymerizing the mixture to form a polymer network, the polymer network being at least one of charge-transporting or luminescent”. The polymer network is neither charge-transporting nor luminescent. Instead, this application is directed to liquid crystal polymer layer that operates via light scattering.

Claims 1, 2, 7-9, 11, 12, 17-19, 21, 22, 27-29, 31, 32, 37-39, 41, 42 and 47-49 were rejected under 35 USC 102(b) over Tanaka et al. (4,292,107). Reconsideration and withdrawal of this rejection is respectfully requested for at least the following reasons.

Claims 1, 11, 21, 31 and 41 include “mixing at least a first polymerizable organic material and a second polymerizable organic material to form a mixture” and “polymerizing the mixture to form a polymer network, the polymer network being at least one of charge-transporting or luminescent”. The resinous binder is neither charge-transporting nor luminescent. Clearly the resinous binder is not charge transporting and it is the radioluminescent phosphor that is luminescent and not the resinous binder.

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Claims 1, 2, 7-9, 11, 12, 17-19, 21, 22, 27-29, 31, 32, 37-39, 41, 42 and 47-49 were rejected under 35 USC 102(b) over Dahlquist (5,411,806). Reconsideration and withdrawal of this rejection is respectfully requested for at least the following reasons.

Claims 1, 11, 21, 31 and 41 include "mixing at least a first polymerizable organic material and a second polymerizable organic material to form a mixture" and "polymerizing the mixture to form a polymer network, the polymer network being at least one of charge-transporting or luminescent". The radiation curable binder is neither charge-transporting nor luminescent. Clearly the radiation curable binder is not charge transporting and it is the phosphor particles that are luminescent and not the radiation curable binder.

Claims 1, 2, 7-9, 11, 12, 17-19, 21, 22, 27-29, 31, 32, 37-39, 41, 42 and 47-49 were rejected under 35 USC 102(b) over Thompson (4,203,792). Reconsideration and withdrawal of this rejection is respectfully requested for at least the following reasons.

Claims 1, 11, 21, 31 and 41 include "mixing at least a first polymerizable organic material and a second polymerizable organic material to form a mixture" and "polymerizing the mixture to form a polymer network, the polymer network being at least one of charge-transporting or luminescent". The radiation curable material and thermally curable material and their resultant multicomponent polymer material are neither charge-transporting nor luminescent. More specifically, the radiation curable material and the thermally curable material and their

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resultant multicomponent polymer material are used for the shaping of polymeric materials, which has nothing to do with charge transport or luminescence.

With respect to the Examiner comments regarding the 102 rejections on pages 5-6 of the Office Action, Applicant again notes that none of the cited references has a polymer network being at least one of charge-transporting or luminescent.

Rejections Under 35 USC 103

Claims 3, 13, 23, 33 and 43 were rejected under 35 USC 103 over Ninomiya et al. (5654046 or 5691092) or Iijima et al. (5,683,838). Reconsideration and withdrawal of these rejections are respectfully requested for at least the following reasons.

Claims 1, 11, 21, 31 and 41 include "mixing at least a first polymerizable organic material and a second polymerizable organic material to form a mixture" and "polymerizing the mixture to form a polymer network, the polymer network being at least one of charge-transporting or luminescent".

The polymer network of Ninomiya et al. (5654046 or 5691092) is neither charge-transporting nor luminescent. Instead, these applications are directed to liquid crystal polymer layers that operate via light scattering. The polymer network Iijima et al. (5,683,838) is neither charge-transporting nor luminescent. Instead, this application is directed to liquid crystal

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polymer layer that operates via light scattering. Even if it is obvious to one of ordinary skill to polymerize with an electron beam radiation instead of UV radiation (which applicant does not admit), none of the references discloses nor makes obvious a polymer network being at least one of charge-transporting or luminescent irrespective of whether they are polymerized with electron beam radiation or UV radiation.

Claims 10, 20, 30, 40 and 50 were rejected under 35 USC 103 over Ninomiya et al. (5654046 or 5691092) or Iijima et al. (5,683,838) as applied to claims 3, 13, 23, 33 and 43, and further in view of Shashidhar et al. (5691092). Reconsideration and withdrawal of these rejections are respectfully requested for at least the following reasons.

Claims 1, 11, 21, 31 and 41 include "mixing at least a first polymerizable organic material and a second polymerizable organic material to form a mixture" and "polymerizing the mixture to form a polymer network, the polymer network being at least one of charge-transporting or luminescent".

The polymer network of Ninomiya et al. (5654046 or 5691092) is neither charge-transporting nor luminescent. Instead, these applications are directed to liquid crystal polymer layers that operate via light scattering. The polymer network Iijima et al. (5,683,838) is neither charge-transporting nor luminescent. Instead, this application is directed to liquid crystal polymer layer that operates via light scattering. Even if it is obvious to one of ordinary skill to include the superior alignment surface of Shashidhar et al. (which applicant does not admit),

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none of the references, alone or in combination, discloses nor makes obvious a polymer network being at least one of charge-transporting or luminescent.

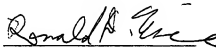
Interview Request

Applicant's representative respectfully requests a personal interview prior to issuance of the next Office Action.

If the Examiner has any questions, Applicant respectfully requests the Examiner contact the Applicant's representative at 703-786-0984.

Applicant hereby petitions for any extension of time which may be required to maintain the pendency of this case, and any required fee, except for the Issue Fee, is to be charged to Deposit Account No. 50-2644 for matter HUL-003.

Respectfully submitted,



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